Volume 16, Number 1, September 1991

Contents

Editor's Corner: Structured Research? (A Partly Tongue-in-Cheek Look) 1
Robert L. Glass

Incremental Algorithms for Interactive Text Formatting 3
A. J. Fisher

Specifying Textual To Graphical Conversion 17
Robin M. Snyder

Formal Definition and Verification of Data Flow Diagrams 29
Yonglei Tao and Chenho Kung

A Decentralized Algorithm for Dynamic Load Balancing with File Transfer 37
Anna Hać and Xiaowei Jin

Distributed Evaluation of Commutative and Associative Functions 53
C. Samuel Hsieh

Stochastic Models for Software Science 59
Sallie Keller-McNulty, Mark S. McNulty, and David A. Gustafson

Run-Time Support for Parallel Functional Programming on Shared-Memory Multiprocessors 69
Ching-Cheng Lee and H. A. Fatmi

An Industry Study of Computer Practices 75
Ronald Geenens and Mustafa Kamal

Biographies 81

Volume 16, Number 2, October 1991

Contents

Editor's Corner 83
Quality Software: What is Management's Role?
Robert L. Glass

SPECIAL SECTION ON COLLABORATIVE SOFTWARE DEVELOPMENT

Jointly-Owned Objects for Collaboration: Operating-System Support and Protection Model 85
Sheng-Uei Guan, Hussein Abdel-Wahab, and Peter Calingaert

A Flexible Framework for Cooperative Distributed Software Development 97
K. Narayanaswamy and Neil M. Goldman

SPECIAL SECTION ON CONCURRENT PROCESSING

Specification of Concurrent Processes Using a Dataflow Model of Computation and Partially Ordered Events 107
Krishna M. Kavi and Akshay K. Deshpande

Reliability Modeling of Parallel Programs with Modular Structure Using Stochastic Petri Nets 121
Tsu-Feng Ho, Wah-Chun Chan, and Chyan-Goei Chung

SPECIAL SECTION ON EMPIRICAL STUDIES

An Empirical Investigation of the Effectiveness of Software Documentation Delivery Systems 129
Ali Emdad

Experimental Evaluation of a Test Coverage Analyzer for C and C++ 135
W. B. Frakes, D. J. Lubinsky, and D. N. Neal

Rigor in Software Complexity Measurement Experimentation 141
S. G. MacDonell

Controllable Factors for Programmer Productivity: A Statistical Study 151
L. Kemayel, A. Mili, and I. Ouederni

Biographies 165

Volume 16, Number 3, November 1991

Contents

Editor's Corner: Software Productivity: What is Management's Role? 167
Robert L. Glass

Formal Development of Hybrid User-Computer Interfaces with Advanced Forms of User Assistance 169
James H. Gerlach and Feng-Yang Kuo

Managing the Quality of Computing Services: A User-oriented Approach Using Utility Theory and Service-level Indices 185
Armin Roeseler and Anneliese von Mayrhauser

Slice, Chunk, and Dataflow Anomaly as Datalog Rules 197
C. Samuel Hsieh

Clustering PROLOG Programs for Distributed Computations 205
Patrick O. Bobbie and Mike Papazoglou

Transaction Models for Design Environments 219
Muruganandan Kumar and Johnny Wong

A Study of Software Metrics 229
M. H. Samadzadeh and K. Nandakumar

Reformulating and Calibrating COCOMO 235
Ronald Gulezian

Design Algorithms for Asynchronous Write Operations in Disk-Buffer-Cache Memory 243
Anna Hac

Generation of ADA and PL/1 Prototypes from Abstract Data Type Specifications 255
Boumediene Belkhouche

Biographies 265

1991 Author Index 267

1991 Subject Index 269